Spanish, Italian, French, and German names, which goes to show its culture in these countries. In England, they are said to be cultivated in 1633,[161] but McIntosh[162] says they were introduced in 1548, but they do not seem to have been known to Gerarde in 1597. In 1633, Worlidge[163] says "eschalots are now from France become an English condiment." They are enumerated for American gardens in 1806.[164] Vilmorin[165] mentions one variety with seven sub-varieties little differing.

The *Shallot* or *eschalot* is called in France, *eschalote, chalote, ail sterile;* in Germany, *schalotte, eschlauch;* in Flanders and Holland, *sjalot;* in Denmark, *skalottelog;* in Italy, *scalogno;* in Spain, *chalote, escaluna;* in Portugal, *eschalota;*[165] in Norway, *skalotlog;*[166] in the Mauritius, *echallotte;*[167] in China, *hiai;*[168] in Cochinchina, *cay nen;*[169] in India, *gundhuna, gudheenk.*[170]

AN AMERICAN TERRESTRIAL LEECH.

BY S. A. FORBES.

ALTHOUGH leeches are normally aquatic worms, terrestrial species of various genera occur in many parts of the world—Ceylon, Java, Summatra, Australia, Japan, Chili, and Brazil—and some properly aquatic leeches (*Trocheta subviridis* of Europe, for example) leave the water in pursuit of earthworms and other prey. I cannot find, however, that either the terrestrial habitat or the earthworm habit has been reported for any North American leech —a fact which gives especial interest to a hitherto unnoticed species occurring commonly in Illinois, and found, so far as known, only in moist earth.

161 Miller's Dict., 1807.
162 McIntosh. Book of the Gard.
163 Syst. Hort., by J. W. Gent, 1683, 193.
164 McMahon. Am. Gard. Kal., 1806, 190.
165 Vilmorin. Les Pl. Pot., 200.
166 Schubeler. Culturpf., 53.
167 Bojer. Hort. Maurit., 347.
168 Smith. Mat. Med. of China, 7.
169 Loureiro. Cochinch., 202.
170 Speede. Ind. Handb. of Gard., 159.

This terrestrial leech was first obtained by me in April, 1876, at Normal, McLean county, Illinois, where it was dug up in a house garden about a dozen rods from the nearest rivulet. An example sent the following year to Prof. A. E. Verrill, with some remarks on its superficial characters, was by him identified, provisionally and with some hesitation, as his *Semiscolex grandis*, originally described[1] from three aquatic individuals obtained from Lake Huron and Lake Superior and a river in Connecticut. I have now, however, fifty-six specimens of this leech, all from the earth in central Illinois, sometimes half a mile or more from water, and representing collections made at different times from April, 1876, to June, 1890; while, on the other hand, it has not once occurred in the course of a large amount of aquatic work done in the same regions during these fifteen years. It has, moreover, constant characters which clearly distinguish it from *Semiscolex grandis*, as far as one may judge by a comparison with Verrill's description, and I do not doubt that it is undescribed. Its only known food is earthworms of various genera, and these it swallows entire—as I have repeatedly found by dissection, and demonstrated likewise by feeding experiments on leeches in captivity. Indeed, my serial sections have this peculiarity: that they present the structure of three worms in one section—that of the leech itself and of two earthworms in its stomach.

From the fact that all my specimens were obtained during the early months of the year—from March to June—it is probable that this leech, like the earthworm, penetrates to considerable depths during the midsummer drouths.

DIAGNOSIS: *Semiscolex terrestris*, n. sp. This is one of the largest of our leeches, my contracted alcoholic specimens reaching a length of seven inches, a width of three-fourths, and a depth of three-eighths of an inch. In form, it is heaviest posteriorly, be-

[1] Synopsis of the North American Fresh-Water Leeches. By A. E. Verrill. U. S. Commission of Fish and Fisheries. Part II. Report of the Commissioner for 1872 and 1873, p. 672 (Published in 1874.) This species clearly belongs to Kinberg's genus Semiscolex, but on the other hand there seems little, except the very rudimentary condition of the pharyngeal jaws, to exclude it from Aulastoma, Moqu. (See Diesing, Systema Helminthum, Vol. I., p. 461; and Apathy, Süsswasser-Hirudineen, in Zoologische Jahrbücher, Band III., p. 793), but in the absence of material for a comparison of these genera, I have followed Verrill in using Kinberg's name.

ing widest at about the eighth annulus in front of the acetabulum, but tapering very gradually, or scarcely at all, thence forward to the antierior fourth, and thence more rapidly to the mouth. Its transverse section is depressed oval, flattened beneath the margins of the body obtuse.

The color is sooty drab, varying to plumbeous black, somewhat lighter beneath, uniform in tint, and quite without spots or mottlings of any sort. A darker median longitudinal stripe, very conspicuous and well defined, is almost invariably present; a paler marginal stripe, often approaching buff, little less constantly so, and a ventral submarginal stripe of the same color as the dorsal one, likewise quite frequent. The surface is everywhere smooth, and I find no external trace of segmental papillæ.

There are ninety-nine complete annuli from the mouth to the posterior sucker, four imperfect annuli in the cephalic lobe, and one such just before the vent—104 in all. All the perfect annuli are very distinct, except the first two, which, while well distinguished dorsally, are almost completely fused beneath to form the posterior border of the mouth. In front of the first annulus is the upper lip, divided by a delicate median groove. There are, consequently, eleven such grooves meeting the margin of the mouth, its posterior boundary being formed by the undivided ventral portion of the fifth annulus. The eyes are ten in number, placed upon the first, second, third, fifth, and eighth annuli, representing somites one to five. The acetabulum is broad oval, wider than long, and measures about ten mm. in its greatest diameter. The vent is large and surrounded by irregular radiating grooves.

The first nephridial pore is at the anterior margin of the tenth complete annulus—the fourteenth in all—and the last or seventeenth pore at the anterior margin of the ninetieth ventral annulus—the ninety-fourth of the full series. These pores open on the ventral surface just within the dark ventral line, and consequently at some little distance from the margin of the body. The male sexual opening is on the posterior part of the twenty-eighth entire annulus, and the female opening on the thirty third.

Within the buccal cavity is a prominent circular fold. Maxillæ three, rudimentary, distinguishable only in sections, with an ill-

defined armature of teeth. The pharynx presents ten to fifteen longitudinal folds, the number varying in different parts—the average twelve or thirteen.

I have seen no specimens of *Semiscolex grandis* Verrill, but draw from the author's description distinctions in the number of annulations ("about ninety" in *grandis*), the markings of the upper lip, the positions of the sexual orifices (in *grandis* in the twenty-fifth and thirtieth annuli respectively), and in the color markings—*grandis* being without stripes, and spotted or blotched with dark, in Verrill's specimens.

RECENT BOOKS AND PAMPHLETS.

AGASSIZ, A., and C. O. WHITMAN.—The Development of Osseous Fishes. History of the Egg from Fertilization to Cleavage. Memoirs Harvard Mus. Comp. Zool., Vol. XIV., 1889. From A. Agassiz.

ALBRECHT, DR.—Uber den Stammbaum der Raubthiere. Sitzungsbericht der Physicalisch-ökonomischen Gesellschaft zu Konigsberg, 1879.

ALLEN, W. F., and D. E. SPENCER.—Higher Education in Wisconsin. Bur. of Ed., Cir. of Inf. No. 1, 1889.

Annual Report Geol. and Nat. Hist. Sur., Canada, Vol. III., 1887-'88, with maps.

Annual Report Ohio Agri. Eper. Station, 1888.

Annarulŭ Biurouliu Geologicŭ, Anul V., No. 1.

Annarulŭ Biurouliu Geologicŭ, Anul II., 1885.

BARUS, C.—On the Thermo-Electric Measurement of High Temperatures. Bull. U. S. Geol. Sur., No. 54, 1889. From the Dept. Int.

BECKER, G. F.—Geology of the Quicksilver Deposits of the Pacific Slope. Monograph U. S. Geol. Sur., Vol. XIII.

BOULENGER, G. A.—Descriptions of a New Snake and Two New Fishes obtained by Dr. H. von Ihering in Brazil.—Descriptions of New Typhlopidæ in the British Museum.—Descriptions of New Reptiles and Batrachians from Madagascar. Extracts *Ann. and Mag. Nat. Hist.*, 1889.—Description of a New Batrachian of the Genus Leptobrachium, obtained by M. S. Fea in the Karens Mts., Burma. Ext. Ann. Mus. Civ. di Sto. Nat., Genoa, 1889. From the author.

BURMEISTER, H.—Die Fossilen Pferde der Pampasformation, 1889. Fromthe author.

Célébration du Centenaire de M. Chevreul. From Charles Brongniart.

Circular No. 6, Am. Soc. Psychical Research.

Circular No. 6, No. 8, No. 10, University of Texas.

CLARKE, F. W.—Report of Work Done in the Division of Chemistry and Physics, 1886-'87. Bull. U. S. Geol. Sur., No. 55. From the Dept. Int.

D'AGINCOURT, DR.—Methodes de Cartographic Geologique Employées par U. S. Geol. Sur. Annuire Geologique Universal, Appendice.

DIXON, S. G.—Education in America. Extract *Med. and Surg. Rept.*, 1890.

EIGENMANN, C. H.—Notes on the Specific Names of Certain North American Fishes. Extract Proc. Phila. Acad. Nat. Sci., 1887. From the author.

EIGENMANN, C. H.—On the Genesis of the Color-cells of Fishes. Extract *West Am. Sci.*, 1889.